20dec01 07:49:28 User259284 Session D1538.3

SYSTEM:OS
File 34:SciSearch(R) Cited Ref Sci 1990-2001/Dec W4
(c) 2001 Inst for Sci Info
File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info

Set	Items	Description
S1	13	CR="BUSSE RF, 1999, V41, P1, MAGNET RESON MED":CR="BUSSE R-F, 2001, V45, P653, MAGNET RESON MED"
S2	20	CR="VANUIJEN CMJ, 1984, V1, P502, MAGN RESON MED":CR="VANU-IJEN CMJ, 1984, V1, P502, MAGNET RESON MED"
S3	14	CR="SOUZA SP, 1988, V12, P1023, J COMPUT ASSIST TO":CR="SO-UZA SP, 1988, V12, P1026, J COMPUT ASSIST TO"
S4	1	NMR()MOVIE/TI
S5	3	CR="MANSFIELD P, 1984, P295, 3RD P SMRM ANN M SAN" OR CR="-MANSFIELD P, 1984, P295, 3RD SOC MAGN RES MED" OR CR="MANSFIE-LD P, 1984, V1, P295, MAG RES MED"
S6	49	S1:S3 OR S5
S7	427	DRIVEN()EQUILIBRIUM OR DEFT
S8	1705	FSE OR FAST()SPIN()ECHO
S9	5	6AND7
S10	5	6AND8
S11	3	9AND10
S12	4	S9:S10 NOT S11
S13	1	INTERACTIVE()FAST()SPIN()ECHO()IMAGING/TI
S14	1	DRIVEN()EQUILIBRIUM()RADIOFREQUENC???/TI
S15	1	SIMA/TI AND HADAMARD/TI
S16	4	S4 OR S13:S15
S17	275	CR="AGARD DA, 1989, V30, P353, METHOD CELL BIOL"
S18	4	CR="BUSSE RF, 1999, V41, P846, MAGNET RESON MED"
S19	75	CR="CARR HY, 1958, V112, P1693, PHYS REV"
S20	125	CR="CASTLEMAN KR, 1996, DIGITAL IMAGE PROCES"
S21	1	CR="CONOLLY S, 1987, TOPICAL C FAST MRI T"
S22	27	CR="DEBBINS JP, 1996, V36, P588, MAGNET RESON MED"
S23	81	CR="EDELMAN RR, 1986, V161, P125, RADIOLOGY"
S24	17	CR="ERNST O, 1997, V169, P1304, AM J ROENTGENOL"
S25	32	CR="FEINBERG DA, 1985, V156, P743, RADIOLOGY"
S26	73	CR="FEINBERG DA, 1986, V161, P527, RADIOLOGY"
S27	11	CR="GMITRO AF, 1996, V35, P734, MAGNET RESON MED"
S28	1	CR="GRIFFITH PR, 1978, P49, TRANSFORM TECHNIQUES"
S29	4	CR="GRYSPEERDT S, 1998, V171, P211, AM J ROENTGENO"
S30	577	CR="HENNIG J, 1986, V3, P823, MAGNET RESON MED"
S31	75	CR="HENNIG J, 1988, V78, P397, J MAGN RESON"
S32	213	CR="HINSHAW WS, 1976, V47, P3709, J APPL PHYS"
S33	2	CR="JOHNSON GA, 1986, V161, P254, RADIOLOGY P"
S34	49	CR="JOSEPH PM, 1985, V9, P651, J COMPUT ASSIST TOM"
S35	57	CR="KERR AB, 1997, V38, P355, MAGNET RESON MED"
S36	8	CR="KUNZ D, 1986, V3, P639, MAGN RESON MED"
S37	20	CR="LEE JKT, 1998, V170, P1457, AM J ROENTGENOL"
S38	15	CR="LEE JN, 1986, V3, P132, MAGNET RESON MED"
S39	51	CR="LEVINE D, 1996, V167, P905, AM J ROENTGENOL"
S40	93	CR="LISTERUD J, 1992, V8, P199, MAGN RESON QUART"
S41	1	CR="LOMAS DJ, 1999, P521, P 7 ANN M ISMRM PHIL"
S42	50	CR="MANSFIELD P, 1977, V10, L55 J PHYS C SOLID STA"
S43	142	CR="MANSFIELD P, 1982, V2, ADV MAGNETIC RESON S"
S44	52	CR="MAUDSLEY AA, 1980, V41, P112, J MAGN RESON"
S45	3	CR="MUHLE C, 1997, V38, P885, ACTA RADIOL"

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S46       151   CR="MULKERN RV, 1990, V8, P557, MAGN RESON IMAGING"
S47         2   CR="MULLER S, 1988, V6, P364, MAGN RESON MED"
S48         9   CR="MURAKAMI R, 1998, V19, P959, AM J NEURORADIOL"
S49        50   CR="NOLL DC, 1991, V10, P154, IEEE T MED IMAGING"
S50         1   CR="OSHIO K, 1998, P1090, P 6 ANN M ISMRM SYDN"
S51         1   CR="PLEWES DB, 1987, 29TH ANN M AM ASS PH"
S52       101   CR="RIEDERER SJ, 1988, V8, P1, MAGNET RESON MED"
S53         7   CR="SCHLUETER FJ, 1994, V193, P413, RADIOLOGY"
S54        32   CR="SPIELMAN DM, 1995, V34, P388, MAGNET RESON MED"
S55         1   CR="SZUMOWSKI J, 1987, 6TH ANN M SOC MAGN R"
S56        36   CR="TANG Y, 1996, V167, P1497, AM J ROENTGENOL"
S57         4   CR="TANG Y, 1998, V8, P384, JMRI-J MAGN RESON IM"
S58         6   CR="TANG Y, 1998, V8, P438, JMRI-J MAGN RESON IM"
S59         1   CR="TOMISATO K, 1999, P1642, P 7 ANN M ISMRM PHIL"
S60         6   CR="TSUCHIYA K, 1996, V167, P1585, AM J ROENTGENOL"
S61         6   CR="VINITSKI S, 1987, V34, P1110, IEEE T NUCL SCI"
S62         1   CR="VONUIJEN CM, 1984, V1, P502, MAGNET RESON MED"
S63        82   CR="WAUGH JS, 1970, V35, P298, J MOL SPECTROSC"
S64        16   CR="WOOD ML, 1985, V2, P517, MAGN RESON MED"
S65        19   CR="ZHOU XH, 1993, V3, P803, JMRI-J MAGN RESON IM"
S66      2125   S17:S65
S67         9   66AND7
S68       450   66AND8
S69         3   S68 AND ORTHOG?
S70        16   S68 AND MAGNETIC()FIELD? ?
S71         9   S70 AND GRADIENT??
S72         3   S70 AND GRADIENT??(3N)FIELD? ?
S73         8   S4 OR S11 OR S12
S74        11   (S67 OR S69 OR S72) NOT S73
      20dec01 08:02:28 User259284 Session D1538.4
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74/9/8 (Item 8 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

04883037 Genuine Article#: UP177 Number of References: 21
Title: MR-IMAGING AND VOLUME LOCALIZED SPECTROSCOPY - MEDICAL AND MATERIALS APPLICATIONS
Author(s): CHANDRAKUMAR N
Corporate Source: CENT LEATHER RES INST/MADRAS 600020/TAMIL NADU/INDIA/
Journal: CURRENT SCIENCE, 1996, V70, N10 (MAY 25), P899-909
ISSN: 0011-3891
Language: ENGLISH Document Type: ARTICLE
Geographic Location: INDIA
Subfile: SciSearch; CC PHYS--Current Contents, Physical, Chemical & Earth Sciences; CC AGRI--Current Contents, Agriculture, Biology & Environmental Sciences
Journal Subject Category: MULTIDISCIPLINARY SCIENCES
Abstract: The principles of magnetic resonance imaging are introduced. The basis is a resonance experiment where spatial information-is built into the frequency, phase or amplitude: of processing magnetization by the: application of **magnetic field gradients** or rf **gradients**. The **field** of view, resolution and contrast of MR images are defined and the limitations on resolution are discussed. In this context, both NMR and ESR imaging are considered explicitly. The unique possibilities offered by MR image contrast are highlighted. Experimental protocols of Fourier Imaging and projection reconstruction imaging are described, in terms of the phase sensitive detection capability of the MR receiver, the trajectory of the reciprocal space vector, procedures for gradient controlled 'slice' selection, and the advantages of echo detection. Gradient and spin echo imaging, as well as chemical shift selective imaging are dealt with and the principles of multiply selective Hadamard excitation discussed, as also some novel alternatives for selective excitation. Pulse sequences for three dimensional imaging as well as four-dimensional spatial-spectral imaging are briefly introduced. Applications from our laboratory-are employed to illustrate the various methods. The special requirements of metabolite imaging are spelt out and the development and applications of multiple quantum imaging in our laboratory discussed in some detail. Volume localized spectroscopy is introduced as' an alternative spatial-spectral procedure. The basis of single scan volume-localization is then dealt with, with reference to a specific three-pulse sequence. The development, implementation and application of two-dimensional volume localized zero quantum spectroscopy for in vivo applications is then briefly de scribed. Finally, MR imaging of solids is introduced, and an illustration of stray field imaging-from our laboratory is included. The article finally calls attention to the novel approach of magnetic resonance force microscopy as well.
Identifiers--KeyWords Plus: MAGNETIC-RESONANCE; STIMULATED ECHOES
Research Fronts: 94-0158 003 (FUNCTIONAL MAGNETIC-RESONANCE-IMAGING; MAPPING HUMAN BRAIN ACTIVITY IN-VIVO; MR SPECTROSCOPY)
94-2335 002 (PULSED-**FIELD GRADIENT** SPIN-ECHO NMR; WATER DIFFUSION; RAT MODEL OF BRAIN INJURY; POLYMER SURFACTANT INTERACTION; MRI IN ACUTE CEREBRAL-ISCHEMIA)

74/9/7 (Item 7 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

05058028 Genuine Article#: TM224 Number of References: 40
Title: FAST AND ULTRAFAST MR-IMAGING - BASIC PRINCIPLES AND PULSE SEQUENCES
Author(s): STEHLING MK; NITZ W; HOLZKNECHT N
Corporate Source: UNIV MUNICH,KLINIKUM GROSSHADERN,INST RADIOL DIAGNOST,MARCHIONINISTR 15/D-81366 MUNICH//GERMANY/; SIEMENS AG,BEREICH MED TECH,MRA ABT/W-8520 ERLANGEN//GERMANY/
Journal: RADIOLOGE, 1995, V35, N12 (DEC), P879-893
ISSN: 0033-832X
Language: GERMAN Document Type: ARTICLE
Geographic Location: GERMANY
Subfile: SciSearch; CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY & NUCLEAR MEDICINE
Abstract: The aim of this article is the systematic treatment of fast and ultrafast magnetic resonance imaging (MRI) techniques. Based on the basic principles of signal generation and spatial encoding with **magnetic field gradients** the differences and important similarities of pulse sequences will be explained. We suggest to replace the conventional grouping of pulse sequences in gradient and spin-echo sequences through single and multi-echo sequences, since the latter is more precise and helpful. We illustrate how single-echo sequences such as ''spin-echo'', FLASH, FISP, PSIF CISS and DESS can be derived from a single gradient echo and how multi-echo sequences such as turbo spin-echo, RARE, HASTE and GRASE are based on echo-planar imaging. The different properties, advantages and disadvantages of the various sequences will be discussed and frequently used acronyms will be explained.
Descriptors--Author Keywords: MAGNETIC RESONANCE TOMOGRAPHY ; PULSE SEQUENCES ; BASIC PRINCIPLES ; FAST IMAGING
Identifiers--KeyWords Plus: NMR
Research Fronts: 94-2335 003 (PULSED-**FIELD GRADIENT** SPIN-ECHO NMR; WATER DIFFUSION; RAT MODEL OF BRAIN INJURY; POLYMER SURFACTANT INTERACTION; MRI IN ACUTE CEREBRAL-ISCHEMIA)
94-0158 002 (FUNCTIONAL MAGNETIC-RESONANCE-IMAGING; MAPPING HUMAN BRAIN ACTIVITY IN-VIVO; MR SPECTROSCOPY)
94-4316 001 (**FAST SPIN-ECHO**; CONTINUING SEARCH FOR THE OPTIMAL MR-IMAGING PULSE SEQUENCE(S); BRAIN IN PATIENTS)

11/9/1 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09511886 Genuine Article#: 412TW Number of References: 22
Title: Cervical spine: Three-dimensional **fast spin-echo** MR imaging - Improved recovery of longitudinal magnetization with **driven equilibrium** pulse
Author(s): Melhem ER (REPRINT) ; Itoh R; Folkers PJM
Corporate Source: Johns Hopkins Med Inst,Dept Radiol & Radiol Sci,600 N Wolfe St/Baltimore//MD/21287 (REPRINT); Johns Hopkins Med Inst,Dept Radiol & Radiol Sci,Baltimore//MD/21287; Philips Med Syst,Best//Netherlands/
Journal: RADIOLOGY, 2001, V218, N1 (JAN), P283-288
ISSN: 0033-8419 Publication date: 20010100
Publisher: RADIOLOGICAL SOC NORTH AMER, 20TH AND NORTHAMPTON STS, EASTON, PA 18042 USA
Language: English Document Type: ARTICLE
Geographic Location: USA; Netherlands
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Descriptors--Author Keywords: magnetic resonance (MR), technology ; spinal cord, MR ; spine, MR

11/9/2 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08963986 Genuine Article#: 350GT Number of References: 31
Title: Interactive **fast spin-echo** imaging
Author(s): Busse RF; Riederer SJ (REPRINT) ; Fletcher JG; Bharucha AE; Brandt KR
Corporate Source: MAYO CLIN & MAYO FDN,MR LAB, 200 1ST ST SW/ROCHESTER//MN/55905 (REPRINT); MAYO CLIN & MAYO FDN,MR LAB/ROCHESTER//MN/55905
Journal: MAGNETIC RESONANCE IN MEDICINE, 2000, V44, N3 (SEP), P339-348
ISSN: 0740-3194 Publication date: 20000900
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC LIFE--Current Contents, Life Sciences; CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: It is shown that a spin-echo sequence may be used to acquire T-2-weighted, high-resolution, high-SNR sections at quasi-real-time frame rates for interactive, diagnostic imaging. A single-shot **fast spin-echo** sequence was designed which employs **driven equilibrium** to realign transverse magnetization remaining at the final spin echo. **Driven equilibrium** is shown to improve T-2 contrast at a given TR, or conversely to reduce TR by approximately 1000 msec and thus increase temporal resolution while maintaining a given level of contrast. Wiener demodulation of k-space data prior to reconstruction is shown to reduce blurring caused by T-2-decay while constraining noise often associated with other inverse filters. Images are continuously acquired, reconstructed, and displayed at rates of one image every one to two seconds, while section position and contrast may be altered interactively. The clinical utility of this method is demonstrated with applications to dynamic pelvic floor imaging and interactive obstetric imaging. (C) 2000 Wiley-Liss, Inc.
Descriptors--Author Keywords: real-time MRI ; **fast spin-echo** ; **driven equilibrium** ; Wiener demodulation ; pelvic floor ; fetal imaging

11/9/3 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08061061 Genuine Article#: 242MG Number of References: 38
Title: MR imaging of articular cartilage using **driven equilibrium**
Author(s): Hargreaves BA (REPRINT) ; Gold GE; Lang PK; Conolly SM; Pauly JM ; Bergman G; Vandevenne J; Nishimura DG
Corporate Source: STANFORD UNIV,DEPT ELECT ENGN, 210 PACKARD ELECT ENGN BLDG/STANFORD//CA/94305 (REPRINT); STANFORD UNIV,DEPT RADIOL/STANFORD//CA/94305; UNIV CALIF SAN DIEGO,DEPT RADIOL/SAN DIEGO//CA/92103
Journal: MAGNETIC RESONANCE IN MEDICINE, 1999, V42, N4 (OCT), P695-703
ISSN: 0740-3194 Publication date: 19991000
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC LIFE--Current Contents, Life Sciences; CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: The high incidence of osteoarthritis and the recent advent of several new surgical and non-surgical treatment approaches have motivated the development of quantitative techniques to assess cartilage loss. Although magnetic resonance (MR) imaging is the most accurate non-invasive diagnostic modality for evaluating articular cartilage, improvements in spatial resolution, signal-to-noise ratio (SNR), end contrast-to-noise ratio (CNR) would be valuable. Cartilage presents an imaging challenge due to its short T-2 relaxation time and its low water content compared with surrounding materials. Current methods sacrifice cartilage signal brightness for contrast between cartilage and surrounding tissue such as bone, bone marrow, and joint fluid. A new technique for imaging articular cartilage uses **driven equilibrium** Fourier transform (**DEFT**), a method of enhancing signal strength without waiting for full T-1 recovery. Compared with other methods, **DEFT** imaging provides a good combination of bright cartilage and high contrast between cartilage and surrounding tissue. Both theoretical predictions and images show that **DEFT** is a valuable method for imaging articular cartilage when compared with spoiled gradient-recalled acquisition in the steady state (SPGR) or **fast spin echo** (**FSE**). The cartilage SNR for **DEFT** is as high as that of either **FSE** or SPGR, while the cartilage-synovial fluid CNR of **DEFT** is as much as four times greater than that of **FSE** or SPGR. Implemented as a three-dimensional sequence, **DEFT** can achieve coverage comparable to that of other sequences in a similar scan time. Magn Reson Med 42:695-703, 1999. (C) 1999 Wiley-Liss, Inc.
Descriptors--Author Keywords: MRI ; **driven equilibrium** ;

12/9/1 (Item 1 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

09770805 Genuine Article#: 447FN Number of References: 13
Title: Hyperechoes
Author(s): Hennig J (REPRINT) ; Scheffler K
Corporate Source: Dept Diagnost Radiol,Sect Med Phys,Hugstetterstr 55/D-79106 Freiburg//Germany/ (REPRINT); Dept Diagnost Radiol,Sect Med Phys,D-79106 Freiburg//Germany/
Journal: MAGNETIC RESONANCE IN MEDICINE, 2001, V46, N1 (JUL), P6-12
ISSN: 0740-3194 Publication date: 20010700
Publisher: JOHN WILEY & SONS INC, 605 THIRD AVE, NEW YORK, NY 10158-0012 USA
Language: English Document Type: ARTICLE
Geographic Location: Germany
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: A novel spin-echo-based refocusing strategy called a hyperecho mechanism is introduced by which the full coherence of magnetization submitted to a sequence of arbitrary RF pulses can be reinstalled. First implementations illustrate the potential of hyperecho formation-especially for Rapid Acquisition with Relaxation Enhancement (RARE) imaging, in which the full image intensify can be retrieved using a fraction of the RF power of a fully refocused sequence, The contribution of stimulated echo pathways to the hyperecho signal leads to an increased signal intensity at a given refocusing time for tissues with T-1 > T-2. For identical T-2 contrast, longer echo times have to be used. Further possibilities far using hyperechoes in gradient-echo sequences and for spin selection are discussed. (C) 2001 Wiley-Liss, Inc.
Descriptors--Author Keywords: hyperecho ; spin echo ; RARE ; **DEFT**
Identifiers--KeyWord Plus(R): REFOCUSING FLIP ANGLES; RARE-SEQUENCES; SENSITIVITY
Cited References:

74/9/2 (Item 2 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

08220787 Genuine Article#: 259JD Number of References: 20
Title: T1- and T2-weighted imaging at 8 tesla
Author(s): Kangarlu A; Abduljalil AM; Robitaille PML (REPRINT)
Corporate Source: OHIO STATE UNIV,MRI FACIL, DEPT RADIOL, CTR ADV BIOMED IMAGING, 1630 UPHAM DR/COLUMBUS//OH/43210 (REPRINT); OHIO STATE UNIV,MRI FACIL, DEPT RADIOL, CTR ADV BIOMED IMAGING/COLUMBUS//OH/43210
Journal: JOURNAL OF COMPUTER ASSISTED TOMOGRAPHY, 1999, V23, N6 (NOV-DEC) , P875-878
ISSN: 0363-8715 Publication date: 19991100
Publisher: LIPPINCOTT WILLIAMS & WILKINS, 227 EAST WASHINGTON SQ, PHILADELPHIA, PA 19106
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC LIFE--Current Contents, Life Sciences; CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: In this work, both T1- and T2-weighted fast imaging methods at 8 T are presented. These include the modified **driven equilibrium** Fourier transform (MDEFT) and rapid acquisition with relaxation enhancement (RARE) methods, respectively. Axial MDEFT images were acquired with large nutation angles, both partially suppressing gray and white matter and permitting the visualization of vascular structures rich in unsaturated spins. Sagittal RARE images, acquired from the same volunteer, were highly T2-weighted, thus highlighting the CSF. At the same time, they provided good visualization of the corpus callosum, cerebellum, and gray and white matter structures. Importantly, both MDEFT and RARE images could be acquired without violating specific absorption rate guidelines.
Descriptors--Author Keywords: magnetic resonance imaging, techniques ; fast spin echo ; brain
Identifiers--KeyWord Plus(R): SPECTROSCOPY; BODY

74/9/3 (Item 3 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06537197 Genuine Article#: YZ730 Number of References: 4
Title: Signal-to-noise enhancement when T-2 not equal T-1, a new investigation of the pulse sequence **DEFT**
Author(s): Carlotti C (REPRINT) ; Taulelle F; Aubay E
Corporate Source: UNIV STRASBOURG 1,CNRS, UMR 50, 4 RUE BLAISE PASCAL/F-67070 STRASBOURG//FRANCE/ (REPRINT); RHONE POULENC CHIM,CTR RECH AUBERVILLIERS/F-93300 AUBERVILLIERS//FRANCE/
Journal: JOURNAL DE CHIMIE PHYSIQUE ET DE PHYSICO-CHIMIE BIOLOGIQUE, 1998 , V95, N2 (FEB), P208-215
ISSN: 0021-7689 Publication date: 19980200
Publisher: EDITIONS SCIENTIFIQUES MEDICALES ELSEVIER, 141 RUE JAVEL, 75747 PARIS, FRANCE
Language: English Document Type: ARTICLE
Geographic Location: FRANCE
Subfile: CC PHYS--Current Contents, Physical, Chemical & Earth Sciences
Journal Subject Category: BIOCHEMISTRY & MOLECULAR BIOLOGY; CHEMISTRY, PHYSICAL
Abstract: Very long experimental times are necessary in order to obtain NMR spectra when the observed nuclei present important spin-lattice relaxation times. **DEFT** sequence allows for reduction of acquisition time though increasing the signal to noise ratio. An analytical approach is proposed for which optimal conditions of usage has been defined for the special case of T-2<<T-1. To obtain full maximization it is necessary to use linear prediction. At last a 2D exchange experiment using **DEFT** is presented.
Descriptors--Author Keywords: **DEFT** ; signal-to-noise enhancement ; relaxation

74/9/4 (Item 4 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06335517 Genuine Article#: YJ661 Number of References: 15
Title: MR-guided biopsies with an ultrafast high-resolution T-2-weighted turbo spin echo sequence ''LoLo'': First clinical results
Author(s): Bucker A (REPRINT) ; Adam G; Neuerburg JM; Glowinski A; vanVaals JJ; Gunther RW
Corporate Source: RHEIN WESTFAL TH AACHEN,RADIOL DIAGNOST KLIN, FAK MED, PAUWELSSTR 30/D-52074 AACHEN//GERMANY/ (REPRINT); PHILIPS MED SYST,/BEST//NETHERLANDS/
Journal: ROFO-FORTSCHRITTE AUF DEM GEBIET DER RONTGENSTRAHLEN UND DER BILDGEBENDEN VERFAHREN, 1997, V167, N5 (NOV), P491-495
ISSN: 0936-6652 Publication date: 19971100
Publisher: GEORG THIEME VERLAG, P O BOX 30 11 20, D-70451 STUTTGART, GERMANY
Language: German Document Type: ARTICLE
Geographic Location: GERMANY; NETHERLANDS
Subfile: CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: Purpose: The feasability of the ''LoLo''-technique for MR guidance of biopsy procedures was tested. Material and Methods: MR-guided biopsies were performed on 10 patients employing a 1.5 T system, The ''Lolo''-technique used is a single shot turbo spin echo technique. Only a small field of view is covered in order to yield images with a resolution of 1 mm(2) in 600 ms. The **orthogonal** orientation of the slice selective radio frequency pulses to each other prevents foldover artifacts. Results: No complications occurred. All biopsy procedures yielded sufficient material to diagnose the underlying disease. The ''LoLo''-technique enabled good depiction of the needle tip in all cases. T-2-weighted contrast typical for turbo spin echo images was observed. No foldover artifacts were detectable. Conclusion: MR-guided biopsies are possible with the ''LoLo''-technique. Compared to gradient echo sequences T-2-weighting and smaller susceptibility artifacts proved to be advantageous.
Descriptors--Author Keywords: interventions, MR-guided ; biopsies ; local look-technique (LoLo) ; MRI
Identifiers--KeyWord Plus(R): ASPIRATION CYTOLOGY; NEEDLE; HEAD; NECK; LESIONS
Research Fronts: 95-1616 001 (**FAST SPIN-ECHO** IMAGING;

74/9/5 (Item 5 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06306901 Genuine Article#: YH250 Number of References: 21
Title: Non-Fourier encoding with multiple spin echoes
Author(s): Panych LP (REPRINT) ; Mulkern RV; Saiviroonporn P; Zientara GP; Jolesz FA
Corporate Source: HARVARD UNIV,BRIGHAM & WOMENS HOSP, SCH MED, DEPT RADIOL, 75 FRANCIS ST/BOSTON//MA/02115 (REPRINT); CHILDRENS HOSP,DEPT RADIOL/BOSTON//MA/02115; BOSTON UNIV,DEPT BIOMED ENGN/BOSTON//MA/02215
Journal: MAGNETIC RESONANCE IN MEDICINE, 1997, V38, N6 (DEC), P964-973
ISSN: 0740-3194 Publication date: 19971200
Publisher: WILLIAMS & WILKINS, 351 WEST CAMDEN ST, BALTIMORE, MD 21201-2436
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: The advantages and limitations of multiple spin-echo sequences for non-fourier encoding are investigated, Complications caused by improper encoding of alternate magnetization pathways due to imperfect refocusing pulses are analyzed, It is shown that mirror image ghosts result if the encoding RF pulse matrix is real-valued, These ghosts can be avoided as long as the rows of the RF pulse matrix are conjugate symmetric, which implies that spatial profiles are real valued, Non-Fourier encoding using bases derived from wavelet, Hadamard, and other real-valued **orthogonal** functions does not result in a mirror ghost artifact, A RARE sequence for non-fourier encoding has been implemented on a clinical imaging system and successfully applied for brain imaging.
Descriptors--Author Keywords: magnetic resonance image encoding ; non-Fourier encoded MRI ; spatially selective RF excitation
Identifiers--KeyWord Plus(R): MRI; SEQUENCES; IMPLEMENTATION; EXCITATION; 2D

74/9/6 (Item 6 from file: 34)
DIALOG(R)File 34:SciSearch(R) Cited Ref Sci

06164115 Genuine Article#: XY937 Number of References: 21
Title: Simultaneous acquisition of spatial harmonics (SMASH): Fast imaging with radiofrequency coil arrays
Author(s): Sodickson DK (REPRINT) ; Manning WJ
Corporate Source: BETH ISRAEL DEACONESS MED CTR,DIV CARDIOVASC, DEPT MED, HARVARD THORNDIKE LAB, 330 BROOKLINE AVE/BOSTON//MA/02215 (REPRINT); CHARLES A DANA RES INST,/BOSTON//MA/02215; BETH ISRAEL DEACONESS MED CTR,DEPT RADIOL/BOSTON//MA/; HARVARD UNIV,SCH MED/BOSTON//MA/
Journal: MAGNETIC RESONANCE IN MEDICINE, 1997, V38, N4 (OCT), P591-603
ISSN: 0740-3194 Publication date: 19971000
Publisher: WILLIAMS & WILKINS, 351 WEST CAMDEN ST, BALTIMORE, MD 21201-2436
Language: English Document Type: ARTICLE
Geographic Location: USA
Subfile: CC CLIN--Current Contents, Clinical Medicine
Journal Subject Category: RADIOLOGY, NUCLEAR MEDICINE & MEDICAL IMAGING
Abstract: SiMultaneous Acquisition of Spatial Harmonics (SMASH) is a new fast-imaging technique that increases MR image acquisition speed by an integer factor over existing fast-imaging methods, without significant sacrifices in spatial resolution or signal-to-noise ratio. Image acquisition time is reduced by exploiting spatial information inherent in the geometry of a surface coil array to substitute for some of the phase encoding usually produced by **magnetic field gradients**. This allows for partially parallel image acquisitions using many of the existing fast-imaging sequences. Unlike the data combination algorithms of prior proposals for parallel imaging, SMASH reconstruction involves a small set of MR signal combinations prior to Fourier transformation, which can be advantageous for artifact handling and practical implementation. A twofold savings in image acquisition time is demonstrated here using commercial phased array coils on two different MR-imaging systems. Larger time savings factors can be expected for appropriate coil designs.
Descriptors--Author Keywords: fast imaging ; RF coil array ; simultaneous acquisition ; MR image reconstruction
Identifiers--KeyWord Plus(R): PHASED-ARRAY; INTENSITY-CORRECTION; MULTIPLE DETECTORS; MRI DATA; RESONANCE
Research Fronts: 95-6693 002 (PHASED-ARRAY COIL; MR CARDIAC IMAGING; RESPIRATORY FEEDBACK MONITOR; FEMALE PELVIS)
95-1616 001 (**FAST SPIN-ECHO** IMAGING; T2-WEIGHTED IMAGES; INVERSION-RECOVERY FAT SIGNAL SUPPRESSION; MR SEQUENCES)

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Title: A NEW T-2 PREPARATION TECHNIQUE FOR ULTRAFAST GRADIENT-ECHO SEQUENCE
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Abstract: The T-2 contrast in images obtained with **driven equilibrium** (90(x) degrees-180(x) degrees-90(x) degrees) prepared ultrafast gradient-echo sequences is compromised by the longitudinal magnetization build-up after the second 90(x) degrees pulse, which does not carry T-2 information. This paper describes a new T-2 contrast preparation technique for ultrafast gradient-echo sequence that suppresses the signal arising from the build-up. By dephasing in the preparation and rephasing in the acquisition of the gradient echoes, the new technique eliminates signals that are not dictated by the T-2 contrast in a **driven-equilibrium** approach. Consequently, it generates an image that is essentially T-2-weighted. Phantom and in vivo experiments were conducted to validate the technique and to demonstrate its clinical utility. These studies indicate that the technique works properly and can be used for in vivo studies.
Descriptors--Author Keywords: ULTRAFAST GRADIENT-ECHO IMAGING ; T-2 WEIGHTING ; MAGNETIZATION PREPARATION